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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,816	10/11/2005	Raf Lodewijk Jan Roovers	NL 030433	5559
65913	7550	11/27/2009		
NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER SHAI, TANMAY K	
			ART UNIT 2611	PAPER NUMBER
			NOTIFICATION DATE 11/27/2009	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

### Office Action Summary

**Application No.**

10/552,816

**Applicant(s)**

ROOVERS ET AL.

**Examiner**

TANMAY K. SHAH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-12 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This communication is in response to the Application No. 10/552,816 in response to communication on 9/11/09. Claims 1 - 12 has been examined.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 - are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheah (US 7286599) in further view of Matsuo (US 5986,599).

Regarding claim 1, A communications receiver, comprising a pulse detection unit, for detecting pulses in a received signal, the pulse detection unit comprising:

a plurality of comparators (i.e. **comparators, 64 and 66 of Fig. 4**);

a sampling time generator (i.e. **sample and hold circuit, Fig. 4, 60 and 62**), for generating signals indicative of a plurality of sampling time points (i.e. **a pair of sample and hold circuits are configured to store the established signal amplitude levels, col 2, line 57 - 60**); and

a reference level generator (i.e. **bit clock samples or known sequence samples, 60 and 62 of Fig. 4**), for generating a plurality of reference levels (i.e. **a pair of sample and hold circuits are configured to store the established signal amplitude levels, as described above the comparators receives the**

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**samples one form received or detected pulses and one form bit clock or known sequence both having amplitude levels, col 2, line 57 - 60),** wherein each of the comparators is programmable with a sampling time point selected from said plurality of sampling time points and with a reference level selected from said plurality of reference levels, and

wherein the received signal is applied to each of the comparators such that each of the comparators produces a respective output signal based on a comparison between the received signal level and the selected reference level at the selected sampling time point (i.e. **the data output and the confidence level output may be provided through a pair of comparators which operate to measure received RF transmissions against established signal amplitude levels for logic 1s logic 0s in a received pulse train. A pair of sample and hold circuits are configured to store the established signal amplitude levels, col 2, lines 55 - 60).** However does not specifically disclose that the comparators is programmable with selected sampling time points.

Matsuo teaches each of the comparators is programmable with a sampling time point selected from said plurality of sampling time points and with a reference level selected from said plurality of reference levels (i.e. **each voltage comparator comparing a differential voltage of the input signal and an inverted signal thereof and a differential voltage of a pair of reference signals selected from among the plurality of pairs of reference signals, col 6, line 13 - 17).**

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It would have been obvious to one of the ordinary skilled in the art at the time the invention was made to combine the teachings of Cheah with Matsuo. One would be motivated to combine these teachings because in doing so the output will be more précised (col 3, line 38- 40).

Regarding claim 2, Cheah with Matsuo teaches claim 1.

Cheah firther teaches, comprising a signal processor, for detecting pulses in the received signal based on the output signals from the comparators (i.e. **68e of Fig. 4, as shown and described it provides the decision based on the output of the comparators and the received signal, col 10, line 15 - 20, also line 27 - 30).**

Regarding claim 4, A Cheah with Matsuo teaches claim 1.

Cheah firther teaches a pre-amplifier (i.e. **LNA, low noise amplifie**), for pre-amplifying the received signal to an appropriate level for comparison with the plurality of reference levels (i.e. **the received signal is first amplified by a low noise amplifier (LNA) 34. The purpose of the LNA 34 at the front end of receiver 32 is to amplify the received signal with very little added thermal noise, col 9. line 2 - 5).**

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Regarding claim 5, A communications receiver as claimed in claim 1, wherein the reference level generator is adapted to scale the generated plurality of reference levels for comparison with the received signal (i.e. **confidence level, so it decides if the generated signal is appropriate to compare or not. i.e. the process may further include providing a decision as to whether or not the pulse is present in the RF signal along with a value representing a confidence level in the decision, col 3, line 6 - 9).**

A communications receiver as claimed in claim 1, further comprising a current reference, for driving bias currents to said plurality of comparators (i.e. **voltage or current, Two comparators 64 and 66, which are each coupled to receive the outputs of the S/H circuits 60 and 62, A bias weighting circuit can be provided to increase the sensitivity of this detection. A decision is then made as to whether or not there truly is a pulse, col 10, line 1 – 2, line 13 - 16).**

Regarding claim 7, there are substantially same limitations as claim 1, thus the same rejection is applicable.

Regarding claim 8, there are substantially same limitations as claim 2, thus the same rejection is applicable.

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Regarding claim 9, there are substantially same limitations as claim 4, thus the same rejection is applicable.

Regarding claim 10, there are substantially same limitations as claim 5, thus the same rejection is applicable.

Regarding claim 11, Cheah with Matsuo teaches claim 7.

Matsuo further comprising programming the comparators with respective selected sampling time points and reference levels, based on knowledge about the possible shapes of said pulses (i.e. **each voltage comparator comparing a differential voltage of the input signal and an inverted signal thereof and a differential voltage of a pair of reference signals selected from among the plurality of pairs of reference signals, col 6, line 13 – 17, level 1 and 0 is the possible shapes of pulses**).

Regarding claim 12, A method as claimed in claim 7, comprising programming the comparators with respective selected sampling time points and reference levels, based on knowledge about the expected arrival times of said pulses (i.e. **each voltage comparator comparing a differential voltage of the input signal and an inverted signal thereof and a differential voltage of a pair of reference signals selected from among the plurality of pairs of reference signals, col 6, line 13 – 17, level 1 and 0 is the possible shapes of pulses, the sampling of the known and arrived pulses**).

***Allowable Subject Matter***

4. Claims 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANMAY K. SHAH whose telephone number is (571)270-3624. The examiner can normally be reached on Mon-Thu (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANMAY K SHAH/  
Examiner, Art Unit 2611

/David C. Payne/  
Supervisory Patent Examiner, Art Unit 2611